

## **REMARKS**

In the Office Action, Claims 17-29 were examined and stand rejected. In response to the Final Office Action, Claims 27 are amended, no claims are cancelled and no claims are added. Applicants respectfully request reconsideration of pending Claims 17-29, in view of the following remarks.

### **I. Claims Rejected Under 35 U.S.C. §112, second paragraph**

The Patent Office has rejected Claims 27-29 under 35 U.S.C. §112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In response, Claim 27 is amended to delete reference to “wherein each of the first layer, the second layer, and the third layer are distinguishable.” Accordingly, Applicants request that the Patent Office withdraw the 35 U.S.C. §112, second paragraph, rejection of Claims 27-29.

### **II. Claims Rejected Under 35 U.S.C. §102**

“Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*” Lindemann Maschinenfabrik v. American Hoist & Derrick (“Lindemann”), 730 F.2d 452, 1458 (Fed. Cir. 1994)(emphasis added). Additionally, each and every element of the claim must be exactly disclosed in the anticipatory reference. Titanium Metals Corp. of America v. Banner (“Banner Titanium”), 778 F.2d 775, 777 (Fed. Cir. 1985).

The Patent Office rejects Claims 17, 19-21, 23 and 25-29 under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Japanese Patent No. 401220839 to Fujihira et al. (“Fujihira”). Applicants respectfully traverse this rejection.

Regarding Claims 17 and 22, Claims 17 and 23 recite an analogous claim feature, which is neither taught nor suggested by either Fujihira or the references of record. Claim 17 is representative:

a first passivation layer formed on said adhesion layer, said first passivation layer and said adhesion layer including at least one common chemical element.

As indicated at page 8 of the Office Action mailed August 25, 2004:

In regards to Claims 17 and 25, Fujihira fails to disclose the following:

a) a first passivation layer. (pg. 8 of the Office Action.)

Regarding Claim 27, Claim 27 recites the following analogous claim feature:

wherein the third layer is a passivation layer formed on the second layer.

Hence, Applicants respectfully submit that Fujihira fails to teach each of the above-described features of Claims 17, 23 and 27. The case law is quite clear in establishing that each and every element of a claim must be exactly disclosed in the anticipatory reference. Id. Accordingly, Applicants respectfully submit that the Patent Office fails to establish a *prima facie* case of anticipation of Claims 17, 23 and 27 under 35 U.S.C. §102(b). Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §102(b) rejection of Claims 17, 23 and 27.

Regarding Claims 19-21, Claims 19-21 depend from Claim 17 and therefore recite the patentable claim features of Claim 17, as described above. Accordingly, Claims 19-21, based on their dependency from Claim 17, are also patentable over Fujihira, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §102(b) rejection of Claims 19-21.

Regarding Claims 25 and 26, Claims 25 and 26 depend from Claim 23 and therefore recite the patentable claim features of Claim 23, as described above. Accordingly, Claims 25 and 26, based on their dependency from Claim 23, are also patentable over Fujihira, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §102(b) rejection of Claims 25 and 26.

Regarding Claim 28, Claim 28 depends from Claim 27 and therefore recite the patentable claim features of Claim 27, as described above. Accordingly, Claim 28, based on their dependency from Claim 27, are also patentable over Fujihira, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §102(b) rejection of Claim 28.

### **III. Claims Rejected Under 35 U.S.C. §103**

The Patent Office rejects Claim 17, 19-21, 23 and 25-29 under 35 U.S.C. §103(a) as obvious over Fujihira in view of U.S. Patent No. 4,543,271 issued to Peters (“Peters”). Applicants respectfully traverse the Patent Office’s rejection.

Regarding Claim 17, Claim 17 recite the following claim feature, which is neither taught nor suggested by either Fujihira, Peters or the references of record:

a first passivation layer formed on said adhesion layer, said first passivation layer and said adhesion layer including at least one common chemical element.

As correctly pointed out by the Patent Office, Fujihira fails to teach the first passivation layer, as recited by Claim 17. Accordingly, the Patent Office cites Peters, which according to the Patent Office discloses:

a SiN passivation layer (for example: *See*, col. 1, lines 17-27 of Peters). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the semiconductor device of Fujihira to include a SiN layer, as disclosed in Peters, because it aids in preventing contamination. (*See*, pg. 8, penultimate ¶.)

In the “Background of the Invention” section, Peters notes that silicon nitride had been used as a passivation layer. (col. 1, lines 18-33.) That section speaks only of silicon nitride and does not describe silicon nitride in the context of other dielectrics. Contrary to the Patent Office’s contention, Applicants respectfully submit that Peters teaches away from the use of a silicon nitride layer as a passivation layer. Specifically:

I have further discovered that the undesirable properties of this prior art silicon nitride material discussed above are directly related to the nature of its heterogeneous composition.

It is the alleviation of this prior art problem of the undesirable electrical and physical properties of the silicon nitride layer formed by photochemical vapor deposition to which the present invention is directed. (col. 2, lines 33-44.) (Emphasis added.)

As further described by Peters:

The purpose of the invention is to provide a new and improved silicon oxynitride material which contains minimal free amorphous silicon, and further, to provide a process for forming this new and improved material. (col. 2, lines 47-51.) (Emphasis added.)

Based on the cited passages above, Applicants respectfully submit that Peters teaches away from the use of a silicon nitride layer as a passivation layer. Applicants respectfully submit that after carefully reviewing the entire specification of Peters, Peters fails to teach or suggest the formation of a silicon nitride layer over the improved silicon oxynitride material, as taught by Peters. As described by Peters:

... The improved properties of this silicon oxynitride material make it well suited for use as both a dielectric insulating layer and a passivation layer in semiconductor integrated circuits and devices. When the silicon oxynitride material of the present invention is used as a passivation layer on a semiconductor device, it has been found advantageous to provide a layer of silicon dioxide atop the silicon oxynitride layer to prevent long-term oxidation of the latter upon exposure to air. (col. 8, lines 51-60.) (Emphasis added.)

Fujihira teaches a silicon oxynitride layer on a silicon dioxide layer. There is no motivation from Peters to add an additional silicon oxynitride layer to the structure of Fujihira. Specifically, as indicated above, the improved properties of Peters’ silicon oxynitride material make it well suited for use as both a dielectric insulating layer and a passivation layer in semiconductor integrated circuits

and devices. In other words, the improved properties of the silicon nitride taught by Peters obviate the need for a separate passivation layer.

Accordingly, Applicants respectfully submit that one skilled in the art would not modify the teachings of Fujihira suggested by the Examiner, since such a modification would run contrary to the explicit teachings of Peters, which eliminated the need for such a separate layer for passivation since the silicon oxynitride taught by Peters can be used for passivation.

Therefore, Applicants respectfully submit that the Patent Office fails to establish a *prima facie* case of obviousness of Claim 17 since the Patent Office fails to illustrate some suggestion or motivation to modify the reference teachings. Accordingly, Applicants respectfully submit that Claim 17 is patentable over the combination of Fujihira in view of Peters, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claim 17.

Regarding Claims 19-21, Claims 19-21 depend from Claim 17 and therefore recite the patentable claim features of Claim 17. Accordingly, Claims 19-21, based on their dependency from Claim 17, are also patentable over the combination of Fujihira in view of Peters. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claims 19-21.

Regarding Claim 23, Claim 23 recites the following patentable claim feature, which is neither taught nor suggested by the combination of Fujihira in view of Peters, as well as the references of record:

a silicon nitride hard passivation layer formed directly on a surface of said silicon oxynitride adhesion layer. (Emphasis added.)

For at least the reasons described above with reference to Claim 17, Applicants respectfully submit that one skilled in the art would not modify Fujihira in a manner explicitly contrary to the teachings of Peters in order to render Claim 23 obvious. Accordingly, Applicants respectfully submit that the Patent Office fails to establish a *prima facie* case of obviousness of Claim 23, since the Patent Office fails to illustrate a suggestion or motivation to modify Fujihira in view of Peters.

Therefore, Claim 23 is patentable over the combination of Fujihira in view of Peters, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claim 23.

Regarding Claims 25 and 26, Claims 25 and 26 depend from Claim 23 and therefore, based on their dependency from Claim 23, are also patentable over the combination of Fujihira in view of Peters, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claims 25 and 26.

Regarding Claim 27, Claim 27 is amended to recite the following claim features, which are neither taught nor suggested by the combination of Fujihira in view of Peters, as well as the references of record:

wherein the second layer and the third layer comprise one common chemical element; and

wherein the third layer is a passivation layer formed on the second layer.  
(Emphasis added.)

For at least the reasons described above with reference to Claims 17 and 23, Applicants respectfully submit that one skilled in the art would not modify Fujihira in a manner explicitly contrary to the teachings of Peters in order to render Claim 27 obvious. Accordingly, Applicants respectfully submit that the Patent Office fails to establish a *prima facie* case of anticipation of Claim 27, since the Patent Office fails to illustrate a teaching or suggestion to modify Fujihira in view of Peters, as suggested by the Patent Office.

Therefore, Claim 27 is patentable over the combination of Fujihira in view of Peters, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claim 27.

Regarding Claims 28 and 29, Claims 28 and 29 depend from Claim 27 and therefore, based on their dependency from Claim 27, are also patentable over the combination of Fujihira in view of Peters, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claims 28 and 29.

The Patent Office rejects Claims 18 and 24 under 35 U.S.C. §103(a) as obvious over Fujihira in view of U.S. Patent No. 5,698,456 issued to Bryant et al. ("Bryant"). Applicants respectfully traverse the Patent Office's rejection

As indicated above with reference to the 35 U.S.C. §102(b) rejection of Claims 17, 23 and 27, the Patent Office has indicated that Fujihira fails to disclose a first passivation layer (*see*, pg. 8 of Office Action mailed August 25, 2004). Accordingly, since Fujihira fails to disclose a first passivation layer, Fujihira could not be modified to include a second passivation layer formed over a first passivation layer, as recited by Claim 18 or a photo-definable polyamide soft passivation layer formed on said silicon nitride hard passivation layer, as recited by Claim 24, the Patent Office has specifically stated Fujihira fails to teach this first passivation layer.

Accordingly, Applicants respectfully submit that Claims 18 and 24, based on their dependency from Claims 17 and 23, respectively, are patentable over the combination of Fujihira in view of Bryant, since the combination of references fails to teach or suggest each of the recited features of Claims 18 and 24. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claims 18 and 24.

The Patent Office rejects Claims 18 and 24 under 35 U.S.C. §103(a) as obvious over Fujihira in view of Peters and Bryant. Applicants respectfully traverse the Patent Office's rejection.

For at least the reasons described above with reference to the obviousness rejections of Claims 17, 23 and 27, Applicants respectfully submit that one skilled in the art would not modify Fujihira in a manner explicitly contrary to the teachings of Peters, which teaches away from the use of a passivation layer by providing an improved silicon oxynitride material, which contains minimal free amorphous silicon (*See*, col. 2, lines 47-51).

Accordingly, since the combination of Fujihira fails to teach a passivation layer, Applicants respectfully submit that modification of the combination of Fujihira in view of Peters and further in view of Bryant to teach or suggest a second passivation layer. In other words, Applicants respectfully submit that the Patent Office fails to establish a suggestion or motivation for modifying Fujihira in view of Peters and further in view of Bryant to teach or suggest the second passivation layer, as recited by Claims 18 and 24. Accordingly, Applicants respectfully submit that Claims 18 and 24, based on their dependency from Claims 17 and 23, respectively, are patentable over the combination of Fujihira in view of Peters and further in view of Bryant. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claims 18 and 24.

The Patent Office rejects Claim 22 under 35 U.S.C. §103(a) as obvious over Claims 18 and 24 and are rejected under 35 U.S.C. §103(a) as obvious over Fujihira in view of Bryant and U.S. Patent No. 5,807,787 issued to Fu et al. ("Fu"). Applicants respectfully traverse the Patent Office's rejection.

For at least the reasons described above with reference to Claims 18 and 24, the Patent Office is prohibited from combining or modifying Fujihira in view of Bryant since, as specifically indicated by the Patent Office (*See*, pg. 8 of Office Action mailed August 25, 2004), Fujihira fails to teach a first passivation layer. Consequently, since Fujihira fails to teach a first passivation layer, Fujihira could not be modified to include a second passivation layer, as taught by Bryant, since to have a second passivation layer would require a first passivation, which is not taught by Fujihira.

Accordingly, Applicants respectfully submit that the Patent Office fails to establish a *prima facie* case of anticipation of Claim 22 as obvious over Fujihira in view of Bryant and further in view of Fu. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claim 22.

The Patent Office rejects Claim 22 under 35 U.S.C. §103(a) as obvious over Claims 18 and 24 and are rejected under 35 U.S.C. §103(a) as obvious over Fujihira in view of Peters, Bryant and Fu. Applicants respectfully traverse the Patent Office's rejection.

For at least the reasons indicated above, the Patent Office fails to establish a suggestion or motivation for modifying Fujihira in view of Peters to include a first passivation layer, since Peters teaches away from a first passivation layer. Consequently, one skilled in the art would not be motivated to modify Fujihira in a manner explicitly contrary to the teachings of Peters. Accordingly, the Patent Office fails to establish that the combination of Fujihira in view of Peters teaches a first passivation layer. As a result of such failure, the combination of Fujihira in view of Peters cannot be modified by Bryant and Fu to teach the second passivation layer, which includes polyamide, as recited by Claim 22.

Accordingly, Claim 22, based on its dependency from Claim 17, is patentable over the combination of Fujihira in view of Peters, Bryant and Fu. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claim 22.

### **CONCLUSION**

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance, and such action is earnestly solicited at the earliest possible date.

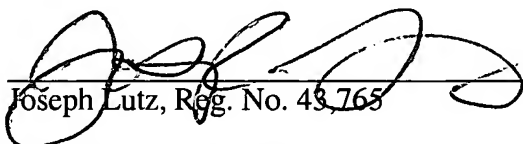
If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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October 24, 2004